

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application

### **Listing of Claims:**

1. (Currently Amended) A method for ~~reducing~~ controlling SO<sub>3</sub> in a combustion process of a sulfur-containing fuel utilizing selective catalytic reduction for the control of NO<sub>x</sub> emissions, the method steps comprising:

- a) partially combusting the fuel in a first stage to create a reducing environment;
- b) ~~maintaining~~ adjusting the reducing environment ~~for a sufficient~~ time period such that SO<sub>3</sub> is reduced to SO<sub>2</sub> prior to selective catalytic reduction to achieve a desirable level of SO<sub>3</sub>;
- c) combusting the remainder of the fuel and combustion intermediates in a second stage with oxidizing environment; thereby ~~reducing~~ controlling the levels of SO<sub>3</sub> in the flue gases.

2. (Original) The method of claim 1, further including the step of micro-staging the first stage fuel combustion.

3. (Original) The method of claim 2, wherein the micro-staging is provided through the use of low-NO<sub>x</sub> burners.

4. (Original) The method of claim 1, further including the step of macro-staging the first stage of fuel combustion.

5. (Original) The method of claim 4, wherein the macro-staging is provided through the use of over-fired air.

6. (Original) The method of claim 1, further including a combination of micro-staging and macro-staging.

7. (Original) The method of claim 6, wherein the micro-staging is provided by low-NOx burners and the macro-staging is provided by over-fired air.

8. (Original) The method of claim 1, wherein the fuel is coal.

9. (Currently Amended) A combustion furnace operated with a method for controlling SO<sub>3</sub> in a combustion process of a sulfur-containing fuel, the method steps comprising:

- a) partially combusting the fuel to create a reducing environment;
- b) ~~maintaining~~ adjusting the reducing environment ~~for a sufficient time~~ period such that SO<sub>3</sub> is reduced to SO<sub>2</sub> to achieve a desirable level of SO<sub>3</sub>;
- c) combusting the remainder of the fuel in an oxidizing environment; thereby reducing the conversion of levels of SO<sub>3</sub> in the flue gases.

10. (Original) The method of claim 9, further including the step of micro-staging the first stage fuel combustion.

11. (Original) The method of claim 10, wherein the micro-staging is provided through the use of low-NOx burners.

12. (Original) The method of claim 9, further including the step of macro-staging the first stage of fuel combustion.

13. (Original) The method of claim 12, wherein the macro-staging is provided through the use of over-fired air.

14. (Original) The method of claim 9, further including a combination of micro-staging and macro-staging.

15. (Original) The method of claim 14, wherein the micro-staging is provided by low-NOx burners and the macro-staging is provided by over-fired air.

16. (Original) The method of claim 9, wherein the fuel is coal

17. (Original) A method for controlling SO<sub>3</sub> concentrations in a combustion process of a sulfur-containing fuel, the method steps comprising:

- a) partially combusting the fuel in a first stage to create a reducing environment;
- b) adjusting the reducing environment time period such that SO<sub>3</sub> is preferentially reduced to SO<sub>2</sub> to achieve a desirable level of SO<sub>3</sub>;
- c) combusting the remainder of the fuel and combustion intermediates in a second stage with oxidizing environment; thereby controlling the levels of SO<sub>3</sub> in the flue gases.

18. (Original) The method of claim 17, further including the step of micro-staging the first stage fuel combustion.

19. (Original) The method of claim 18, wherein the micro-staging is provided through the use of low-NOx burners.

20. (Original) The method of claim 17, further including the step of macro-staging the first stage of fuel combustion.

21. (Original) The method of claim 20, wherein the macro-staging is provided through the use of over-fired air.

22. (Original) The method of claim 17, further including a combination of micro-staging and macro-staging.

23. (Original) The method of claim 22, wherein the micro-staging is provided by low-NO<sub>x</sub> burners and the macro-staging is provided by over-fired air.

24. (Original) The method of claim 17, wherein the fuel is coal.